Making Decisions Before Drought Strikes

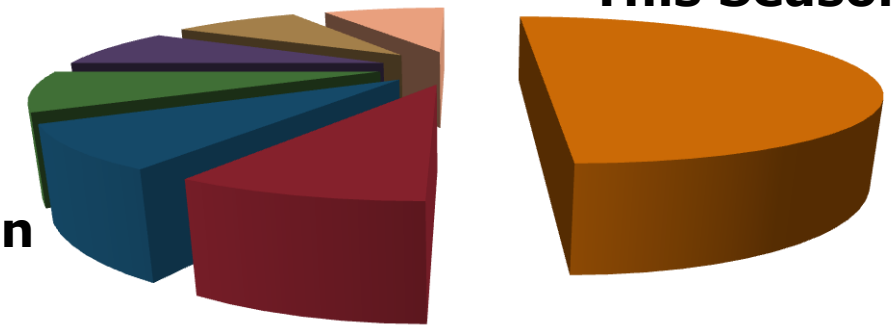
The Drought Decision Calculator

Gale Dunn, USDA-ARS, Agricultural Systems Research Unit, Fort Collins, CO

Environmental Factors that Affect Forage Growth

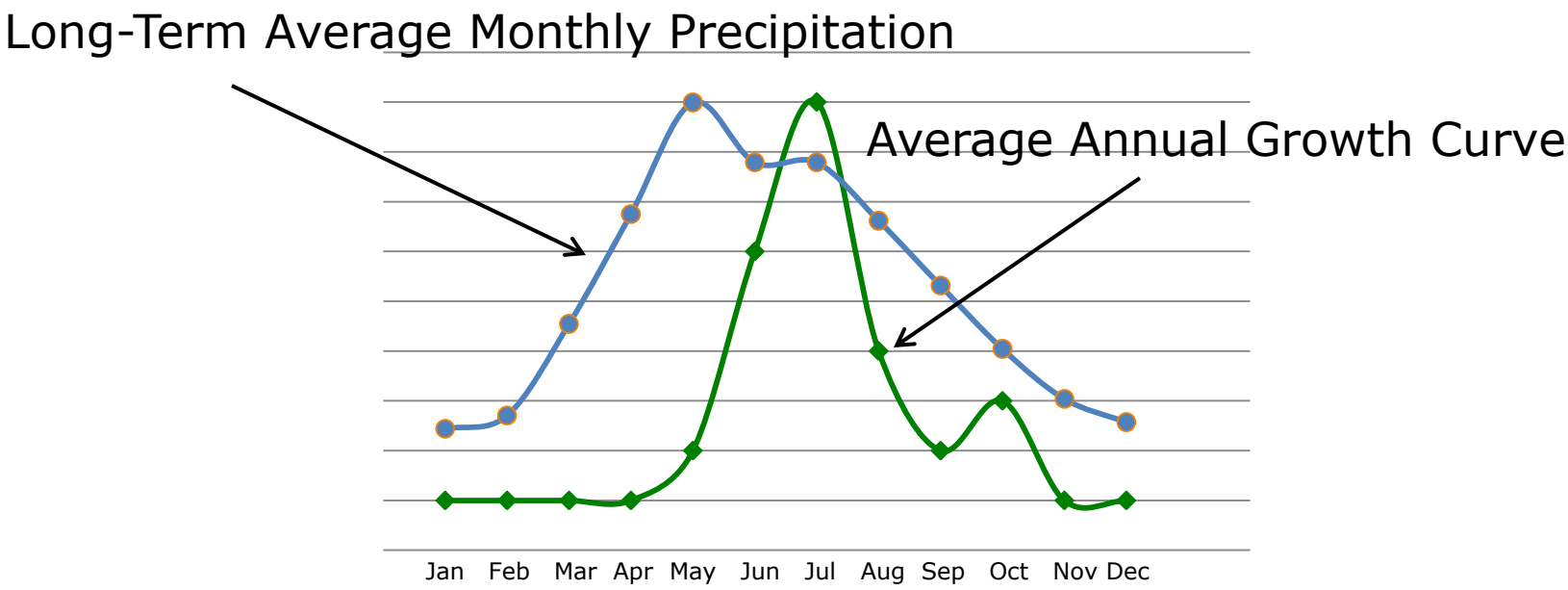
This Season's Precipitation

Other Factors:
Soil type
Solar rad.
Previous season



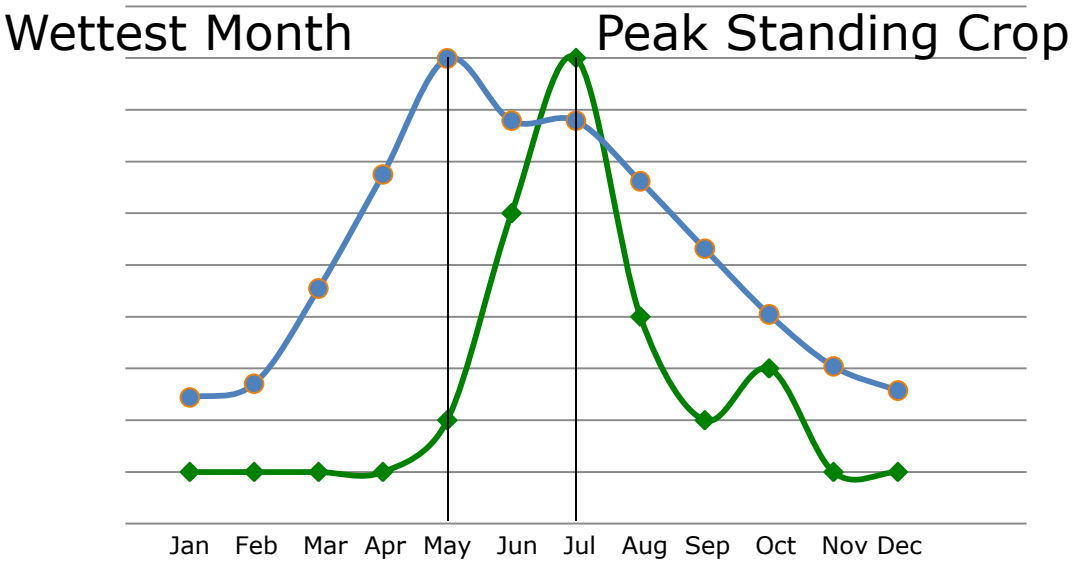
Temperature

Precipitation and Forage Growth



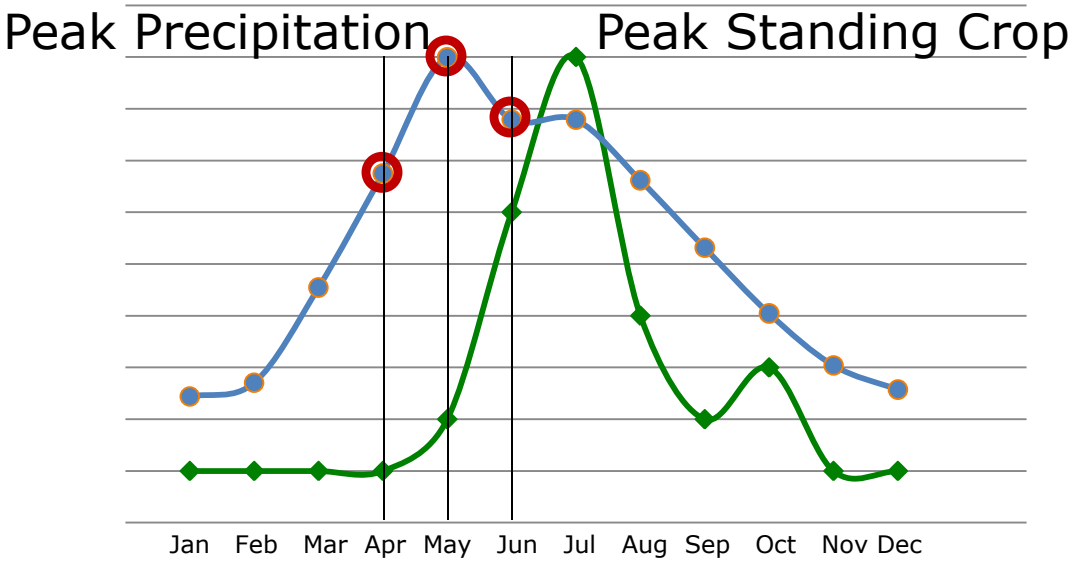
Cheyenne, WY
Average Precipitation = 15.1 inches

Precipitation and Forage Growth



Cheyenne, WY
Average Precipitation = 15.1 inches

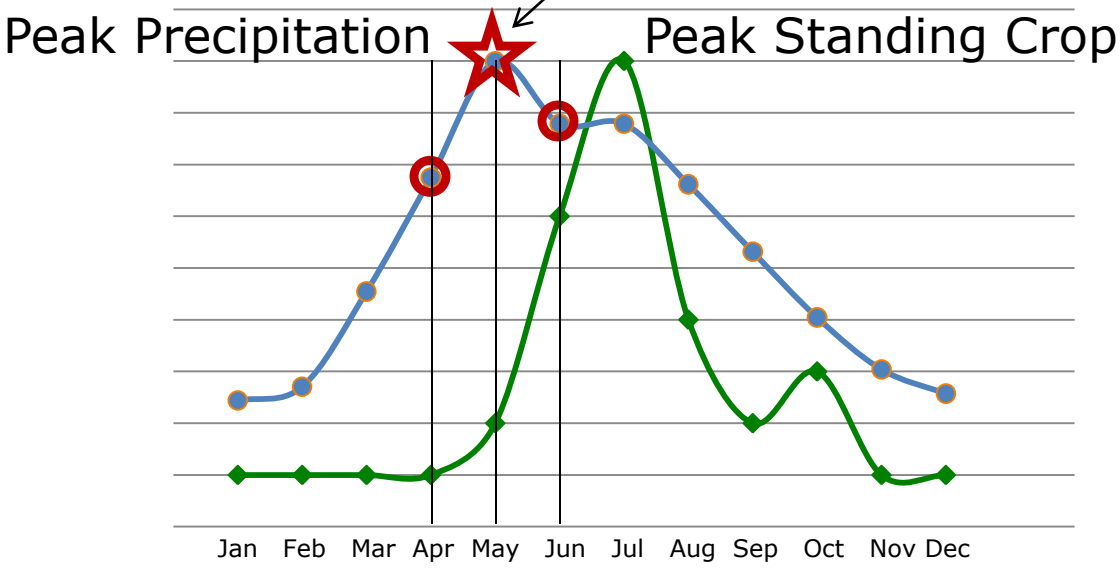
Precipitation and Forage Growth



Cheyenne, WY
Average Precipitation = 15.1 inches

Precipitation and Forage Growth

~30% of annual variation in forage production is explained by May precipitation



So What?

Cheyenne, WY
Average Precipitation = 15.1 inches

Precipitation and Forage Growth

What does a knowledge of May precipitation really Mean?

Does a reduction in May precipitation by 50% mean a 50% reduction in peak standing crop?

What if both May and June have 50% of average precipitation? Does that mean there is no forage growth?

DROUGHT DECISION CALCULATOR

RFA-5084 Agreement Number: 05IE08310221

United States Department Of Agriculture

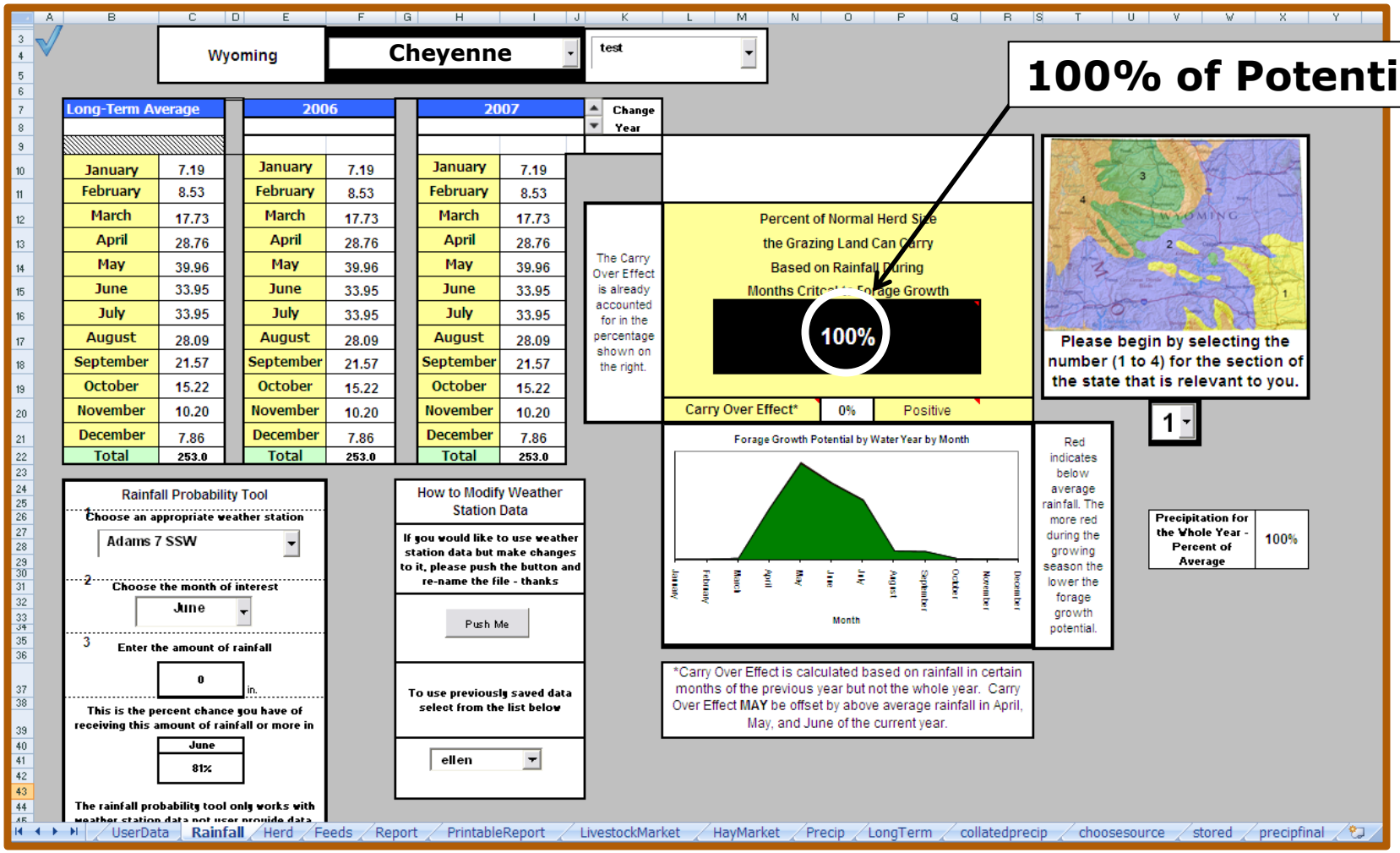
Risk Management Agency

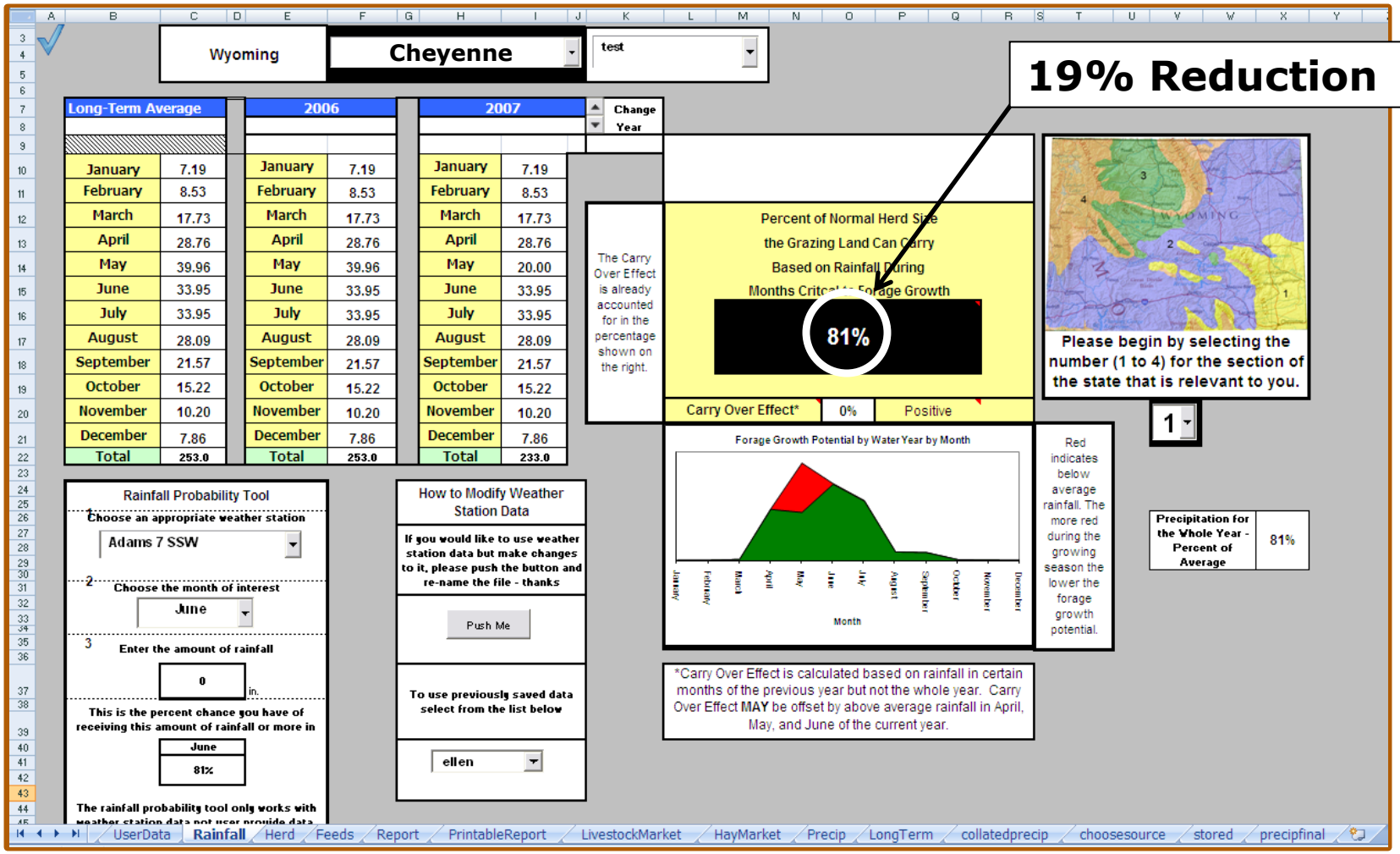
Agricultural Research Service

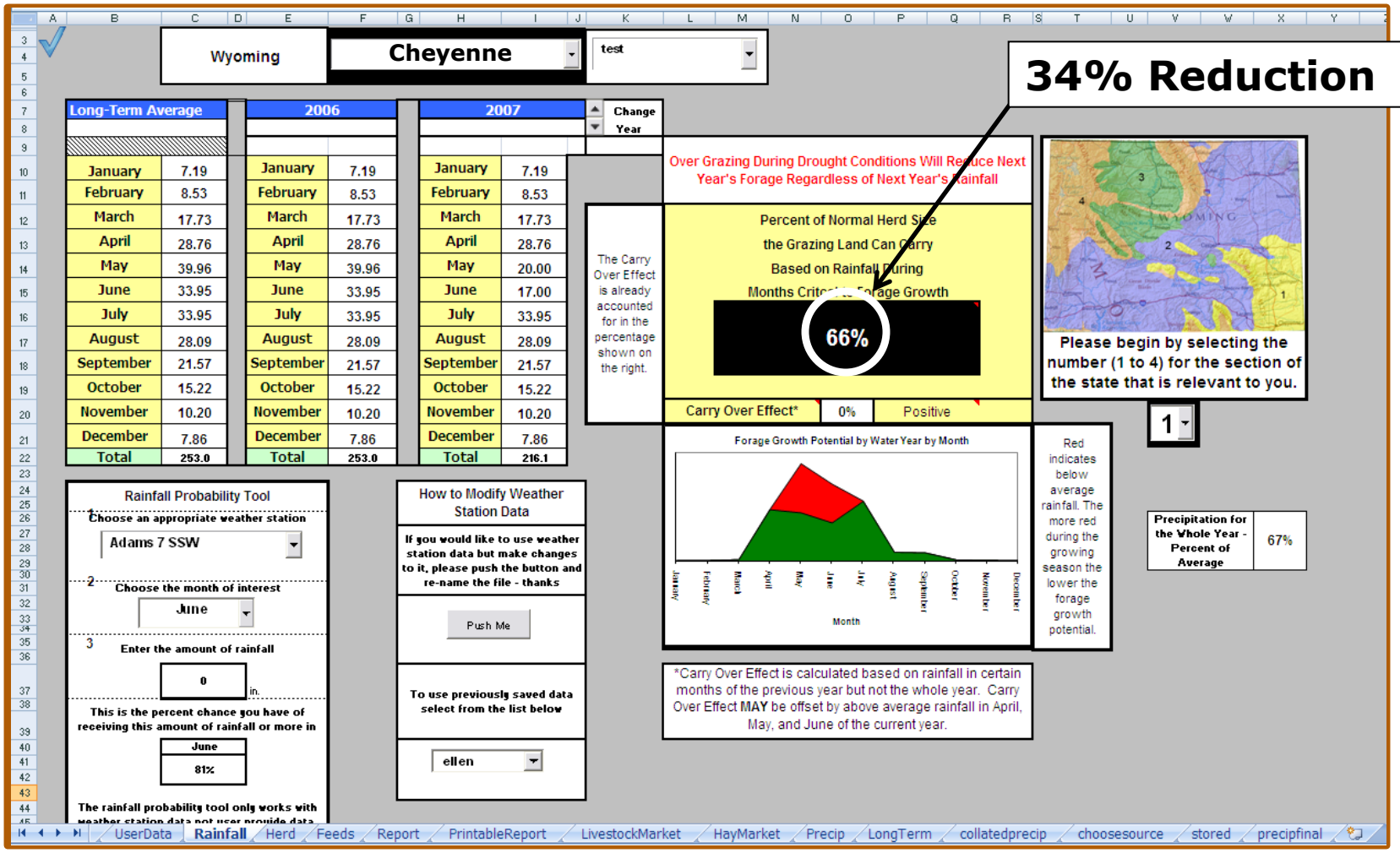
NRCS Natural Resources Conservation Service

Protect America's Greatest Resource: Farmers and Ranchers

Title | Instructions | UserData | Rainfall | Herd | Feeds | Report | PrintableReport | LivestockMarket | HayMarket | Precip | LongTerm | collatedprecip | choosesource


Wyoming
Cheyenne
test
100% of Potential
Long-Term Average
2006
2007
Change Year
January 7.19
February 8.53
March 17.73
April 28.76
May 39.96
June 33.95
July 33.95
August 28.09
September 21.57
October 15.22
November 10.20
December 7.86
Total 253.0
The Carry Over Effect is already accounted for in the percentage shown on the right.
Percent of Normal Herd Size the Grazing Land Can Carry Based on Rainfall During Months Critical to Forage Growth
100%
Carry Over Effect* 0% Positive
Please begin by selecting the number (1 to 4) for the section of the state that is relevant to you.
1
Forage Growth Potential by Water Year by Month
January February March April May June July August September October November December
Month
Red indicates below average rainfall. The more red during the growing season the lower the forage growth potential.
Precipitation for the Whole Year - Percent of Average 100%
*Carry Over Effect is calculated based on rainfall in certain months of the previous year but not the whole year. Carry Over Effect MAY be offset by above average rainfall in April, May, and June of the current year.
Rainfall Probability Tool
1 Choose an appropriate weather station
Adams 7 SSW
2 Choose the month of interest
June
3 Enter the amount of rainfall
0 in.
This is the percent chance you have of receiving this amount of rainfall or more in
June
81%
The rainfall probability tool only works with weather station data not user provide data
How to Modify Weather Station Data
If you would like to use weather station data but make changes to it, please push the button and re-name the file - thanks
Push Me
To use previously saved data select from the list below
ellen
UserData Rainfall Herd Feeds Report PrintableReport LivestockMarket HayMarket Precip LongTerm collatedprecip choosesource stored precipfinal


Wyoming
Cheyenne
test
19% Reduction
Long-Term Average
2006
2007
Change Year
January 7.19 7.19 7.19
February 8.53 8.53 8.53
March 17.73 17.73 17.73
April 28.76 28.76 28.76
May 39.96 39.96 20.00
June 33.95 33.95 33.95
July 33.95 33.95 33.95
August 28.09 28.09 28.09
September 21.57 21.57 21.57
October 15.22 15.22 15.22
November 10.20 10.20 10.20
December 7.86 7.86 7.86
Total 253.0 253.0 233.0
The Carry Over Effect is already accounted for in the percentage shown on the right.
Percent of Normal Herd Size the Grazing Land Can Carry Based on Rainfall During Months Critical to Forage Growth
81%
Carry Over Effect* 0% Positive
Please begin by selecting the number (1 to 4) for the section of the state that is relevant to you.
1
Forage Growth Potential by Water Year by Month
January February March April May June July August September October November December
Month
Red indicates below average rainfall. The more red during the growing season the lower the forage growth potential.
Precipitation for the Whole Year - Percent of Average 81%
*Carry Over Effect is calculated based on rainfall in certain months of the previous year but not the whole year. Carry Over Effect MAY be offset by above average rainfall in April, May, and June of the current year.
Rainfall Probability Tool
1 Choose an appropriate weather station
Adams 7 SSW
2 Choose the month of interest
June
3 Enter the amount of rainfall
0 in.
This is the percent chance you have of receiving this amount of rainfall or more in
June
81%
The rainfall probability tool only works with
How to Modify Weather Station Data
If you would like to use weather station data but make changes to it, please push the button and re-name the file - thanks
Push Me
To use previously saved data select from the list below
ellen
UserData Rainfall Herd Feeds Report PrintableReport LivestockMarket HayMarket Precip LongTerm collatedprecip choosesource stored precipfinal


Wyoming
Cheyenne
test
34% Reduction
Long-Term Average
2006
2007
Change Year
January 7.19 7.19 7.19
February 8.53 8.53 8.53
March 17.73 17.73 17.73
April 28.76 28.76 28.76
May 39.96 39.96 20.00
June 33.95 33.95 17.00
July 33.95 33.95 33.95
August 28.09 28.09 28.09
September 21.57 21.57 21.57
October 15.22 15.22 15.22
November 10.20 10.20 10.20
December 7.86 7.86 7.86
Total 253.0 253.0 216.1
Over Grazing During Drought Conditions Will Reduce Next Year's Forage Regardless of Next Year's Rainfall
The Carry Over Effect is already accounted for in the percentage shown on the right.
Percent of Normal Herd Size the Grazing Land Can Carry Based on Rainfall During Months Critical to Forage Growth
66%
Carry Over Effect* 0% Positive
Forage Growth Potential by Water Year by Month
January February March April May June July August September October November December
Month
Red indicates below average rainfall. The more red during the growing season the lower the forage growth potential.
*Carry Over Effect is calculated based on rainfall in certain months of the previous year but not the whole year. Carry Over Effect MAY be offset by above average rainfall in April, May, and June of the current year.
Please begin by selecting the number (1 to 4) for the section of the state that is relevant to you.
1
WYOMING
Precipitation for the Whole Year - Percent of Average
67%
Rainfall Probability Tool
1 Choose an appropriate weather station
Adams 7 SSW
2 Choose the month of interest
June
3 Enter the amount of rainfall
0
in.
This is the percent chance you have of receiving this amount of rainfall or more in
June
81%
The rainfall probability tool only works with
How to Modify Weather Station Data
If you would like to use weather station data but make changes to it, please push the button and re-name the file - thanks
Push Me
To use previously saved data select from the list below
ellen
UserData Rainfall Herd Feeds Report PrintableReport LivestockMarket HayMarket Precip LongTerm collatedprecip choosesource stored precipfinal

Drought Decision Calculator will be available soon for the following states:

North Dakota
South Dakota
Nebraska
Montana
Wyoming
Colorado
Utah
New Mexico
Nevada